ACC-i2 with TCT

THE IMPACT OF THERAPEUTIC HYPOTHERMIA ON SERUM POTASSIUM

i2 Poster Contributions
McCormick Place South, Hall A
Saturday, March 24, 2012, 9:30 a.m.-Noon

Session Title: Outcomes of Patients Treated with PCI
Abstract Category: 4. Outcomes/Operator Volume/Public Reporting/Misc. Topics/Guidelines
Presentation Number: 2523-235

Authors: *Akrivi Manola, Giovanni G. Geronilla, Kamala Ramya Kallur, Hanna Slim, Justin Lundbye, Hartford Hospital, Hartford, CT, USA*

Background: Therapeutic hypothermia (TH) has been shown to improve survival and

neurological outcome in patients resuscitated from cardiac arrest. Electrolyte disturbances and especially hypokalemia are commonly noted during TH. Experimental data suggest that transient potassium (K) shifts into cells may be responsible. Therefore the purpose of this study was to determine the impact of TH on serum K.

Methods: We identified 137 patients who underwent TH between '04-'11. We monitored the K levels every 4 hours during hypothermia and the rewarming phase and calculated the replacement required every 8 hours.

Results: Our population consisted of 70% men, mean age was 61+/- 15.5 years, 35% were diabetics, 69% had history of hypertension and 35% had coronary artery disease. Presenting rhythms were asystole, pulseless electrical activity, ventricular fibrillation and ventricular tachycardia at 21.2%, 32.8%, 42.3% and 3.6% respectively. Mean potassium level was 4.3 mmol/L at initiation of TH, decreased to 3.89 at 4 hours ($p<0.005$) and reached a nadir of 3.84 at 8 hours. After 24 hours (rewarming phase) it peaked to 4.17mmol/L. Mean K replacement was 20 meq for the first 8 hours, 20 meq from 8 to 16 hours and 10 meq from 16 to 24 hours.

Conclusions: Hypokalemia is very common during TH. It is more prominent during the first 4 to 12 hours. We show that relatively low amounts of K replacement is required to maintain normal K levels during TH and to avoid rebound hyperkalemia during the rewarming phase.